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## VALUATION OF RAILWAYS, WITH ESPECIAL REFERENCE TO THE PHYSICAL VALUATION IN MINNESOTA

During recent years there has been much discussion of valuation of the physical properties of railways as a basis for public regulation of their rates. The subject has been moved a good way from the field of academic theory to that of applied theory by the exhaustive physical valuation of the railways of Minnesota, which recently was completed by the railroad commission of that state.

There were "physical valuations" before that in Minnesota, notably that in Texas in 1894; that in Michigan in 1900; and that in Wisconsin in 1903. But the valuation in Texas recently was admitted by the engineer who made it to be entirely out of date; and it never was entitled to much respect. None of these valuations was so exhaustive as that in Minnesota; and those in Michigan and Wisconsin were made as bases for taxation, not rate-regulation. The railroad commission of Washington finished a physical valuation of the railways in that state for purposes of state-regulation at about the same time that the Minnesota commission completed its work. But the valuation in Washington relates to only a few roads, built and operated under somewhat unusual conditions, while the Minnesota valuation relates to nineteen carrying and six switching, or terminal roads, having an aggregate line-mileage of 7,596 miles and an aggregate track-mileage of 10,437 miles, built and operated under physical and commercial conditions similar to those in a large part of the

country. On the whole, it is believed that the valuation in Minnesota affords the best materials in existence for what may perhaps fittingly be termed a "concrete" study of valuation as a basis for rate-regulation.

A brief study of this sort will be attempted in this article. I shall try, first, to describe and, second, to discuss the method and results of the valuation in Minnesota; third, to outline the only method of valuation that, it seems to me, finally will stand the scrutiny of enlightened economists or of the Supreme Court of the United States; and, fourth, to indicate in what ways, and to what extent, a fair and legal valuation could advantageously be used as a basis for rate-regulation.

## I

The plan of the Minnesota commission contemplated a valuation, based solely on the original cost of construction and the estimated cost of reproduction of the physical properties. Mr. Dwight C. Morgan, an engineer of experience and ability, was employed to take direct charge of the work. Mr. Morgan found that records to show the original cost of the older and more important lines were not available. The valuation made is, therefore, based solely on the estimated cost of reproduction of the physical properties, new, and also in their present condition.

A meeting of the members of the commission and its engineers with railway officers representing 95 per cent. of the mileage in Minnesota, was held on January 26, 1906, and a plan of co-operation agreed upon. The wages and prices actually paid in 1905 were adopted as unit costs of labor and materials. A subsequent review showed that the wages and prices of that year were about the average for the five-year period, 1902-7, and the valuation was made as of June 30, 1907.

The railways were supplied with blanks prepared by the commission on which to enter, with estimates of their cost of reproduction, all the multitudinous items composing their physical properties, from land for right-of-way, yards, and terminals, to locomotives and fish plates; from the brick in the large passenger stations in Minneapolis and St. Paul to the small-

est shop tools; from the draw-spans in the bridges across the Mississippi River to the timber in culverts. A complete set of blanks was filled out for each 100 miles of main line; branches were treated according to their special conditions.

After the blanks were filled out and returned by the railways, representatives of the commission checked them by a thorough and elaborate method.

The railways provided a special train, consisting of a locomotive and business car, for which the state paid the actual running-cost. One or more members of the commission and two of its engineers, accompanied by general or division officers of the road, on whose line the train happened to be, went in this train over each road. The detailed reports of the road were taken along. The train moved slowly to permit constant observations of the character and standards of construction and maintenance. Frequent stops were made, often once in a mile, usually once in two miles, sometimes only once in five miles, when the party got out, and the commission's engineers ascertained the amount and nature of the ballast for some distance along the roadway, the depth and character of cuts and fills, the weight and age of rails and fastenings, the number of ties per mile, etc. The facts found were constantly compared with the reports of the railways and noted in the engineers' field-books. The terminals in Minneapolis, St. Paul, and Duluth were examined foot by foot. Stations, shops, cattle-pens, etc., were investigated, and the railways' reports about them checked, with the same thoroughness.

Rolling-stock used on interstate roads was appraised on a mileage basis, it being assumed that the standards of each interstate road were about the same for its entire line as they were in Minnesota.

To ascertain the cost of reproduction of land used for right-of-way, yards, and terminals, the commission sent special agents throughout the state, who examined the official county records to find what prices had been brought by land within one and one-half miles of any railway that had been sold since January 1, 1900. Particular pains were taken to find what railways had

paid for land for railway purposes subsequent to the date named. In reaching a determination of the true value of lands adjacent to railways records of 55,000 bona-fide sales, aggregating 1,300,000 acres, and involving considerations approximating \$1,000,000, were used. Records also were used of bona-fide sales of land to recently built railway lines, aggregating 7,000 acres, located in various parts of the state, and involving considerations amounting to \$4,200,000.

The investigations of the commission showed that it cost an average of about three times as much to get land for railway right-of-way as to get it for other purposes. It was found that to get land in St. Paul for terminals cost an average of  $1\frac{3}{4}$  times as much as to get it for other purposes; in Minneapolis,  $1\frac{3}{8}$  times as much; and in Duluth,  $1\frac{1}{4}$  times as much. It was also found to be a general rule that where a railway bought land by agreement it acquired it much cheaper than where it got it by the exercise of the power of eminent domain through condemnation proceedings.

There was a sharp cleavage of opinion between the commission and the officers of the railways over the basis on which land used for right-of-way, yards, and terminals should be appraised. The railway officers contended that the valuation should be based on what the data collected showed it would cost now to acquire the land for *railway* purposes. The commission contended that it should be based on what it would cost now to acquire the land for *other-than-railway* purposes. In other words, the commission's view was that if farm lands were worth \$100 per acre, adjacent railway right-of-way should be appraised at \$100 per acre, not at \$300 per acre, the price that the data collected shows it probably would cost now to get it for railway right-of-way, if it were unoccupied. The result of this difference of opinion was that the commission made two appraisals, "Estimate A" and "Estimate B." In "Estimate A" it appraised railway land upon the basis of what it would cost to get it now for railway purposes. In "Estimate B" it appraised it at what it would cost to get it for other-than-railway purposes. In "Estimate B" it also

omitted any allowance for solidification and adaptation of road-bed.

Railway engineers usually add 10 per cent. to their estimates of the cost of projected lines for "contingencies." As he was valuing lines already built, Mr. Morgan thought an allowance of 5 per cent. would be enough. He allowed for interest during construction at the rate of 4 per cent.

The railways were asked to furnish estimates not only of the "cost of reproduction, new," of their properties, but also, making an allowance for depreciation due to wear and tear, to estimate their "present value." This they did not do, because the officers of some of the lines contended, that, as their properties were well maintained, there was no depreciation to be allowed for; that seasoned properties were more valuable than new.

The Minnesota proportion (on a mileage basis) of the capitalization of the nineteen carrying railways in that state, is \$334,979,692. I cannot find the capitalization of the Duluth Union Depot and Transfer Company, but the aggregate capitalization of the other five switching, or terminal, railways in the state, with a line-mileage of 18.3 miles, is \$7,555,000, making an aggregate capitalization for all the mileage in the state, except the Duluth Union Depot and Transfer Company, of \$342,534,692, or \$43,777 per mile. The railways estimated the total cost of reproduction, new, of their physical properties, as of June 30, 1906, at \$500,675,780, or \$65,909 per mile. The commission's estimates (as of June 30, 1907) compare with the foregoing figures as follows:

*Estimate A.*—Cost of reproduction, new, all lines, \$411,735,195, or \$54,201 per mile; present value, all lines, \$360,480,161, or \$47,456 per mile. Cost of reproduction, new, 19 carrying lines, \$397,299,471, or \$52,430 per mile; present value, 19 carrying lines, \$347,051,336 or \$45,799 per mile. Cost of reproduction, new, 6 switching lines, \$14,435,724, or \$770,933 per mile; present value, 6 switching lines, \$13,428,824, or \$717,160 per mile.

*Estimate B.*—Cost of reproduction, new, all lines, \$373,820,141; or omitting allowance for adaptation and solidification of

roadbed, \$360,961,548, or \$47,517 per mile; present value, all lines, \$322,565,106; omitting allowance for solidification and adaptation, \$309,706,513, or \$40,772 per mile. Cost of reproduction, new, carrying lines, omitting allowance for solidification and adaptation, \$350,106,320, or \$46,202 per mile; present value, \$299,858,186, or \$39,571 per mile. Cost of reproduction, new, switching roads, omitting allowance for solidification and adaptation, \$10,855,227, or \$579,718 per mile; present value, \$9,848,327, or \$525,945 per mile.

It will be noted that the average capitalization of all lines, \$43,777 per mile, is less than the average valuation per mile upon any of the bases except "Estimate B, Present Value," omitting allowance for adaptation and solidification of roadbed. It should also be remarked that over \$37,000,000 of the difference between "Estimates A" and "B" is due to the fact that in "Estimate A" land is appraised on the basis of its cost of reproduction for railway purposes, while in "Estimate B" it is appraised on the basis of its cost of reproduction for other-than-railway purposes. The commission, as already indicated, regards the latter as the correct basis of valuation.

## II

The Minnesota valuation raises several questions regarding the factors that should enter into an estimate of the cost of reproduction of the physical properties of a railway. Space will permit reference to only the most important.

The commission and its engineers held that owing to depreciation in the value of equipment, rails, etc., the "present value" of the properties was less than their "cost of reproduction, new." The officers of some of the railways contended that such depreciation, if any, was offset by appreciation in value of the property, due to seasoning. There is some ground for both of these contentions. A rail, a car, a locomotive, loses in market value, becomes "second hand," the moment it is put in service; and it gradually wears out or becomes obsolete. For this reason there should be some deduction for depreciation. But the roadway of a new railway appreciates in value for a number of years owing

to what the commission calls "adaptation and solidification." How railway engineers and operatives regard the matter is illustrated by the fact that the Chicago, Milwaukee & St. Paul will begin running through freight trains over its Pacific Coast extension in July, 1909, but will not let even the large prospective travel to the Alaska-Yukon-Pacific Exposition at Seattle next summer tempt it to begin running through passenger trains over the extension until July, 1910. It is felt that the line will not be safe for fast trains until then. Now, if there ought to be a deduction from the estimated cost of reproduction, new, of old roads, owing to depreciation of rails, rolling stock, etc., should there not be an allowance for *appreciation*. due to seasoning of the roadbed? It would seem there could be only one fair answer. Yet the commission not only deducts an aggregate of over \$51,000,000 for depreciation, but also, in "Estimate B," withholds the comparatively small aggregate allowance of \$12,858,593 that it made in "Estimate A" for "adaptation and solidification."

Another very important question is the proper basis of valuing land used for right-of-way, yards, and terminals. The commission found that it always costs much more to get land for railway purposes than it would cost to get the same land for farms, or to build residences, factories, or office buildings. But it says in its report:

It seems to us that the term "cost of reproduction" could never have been used by the courts in a sense that would cause an entirely imaginary and artificial value to be placed upon property actually owned and in the possession of the railway. . . . We are asked to . . . proceed upon the theory that the land, although of its present value, is not in the possession of the railway, and that to acquire it, it would be necessary to pay this additional amount known as the railway value. The result of this would be that the true, or market value of the land would be disregarded and an artificial value placed upon it, on an hypothesis that has no existence in fact.

It seems to the present writer that the method the commission favors, not the one it opposes, disregards the actual facts. The question being considered is what constitutes the "true, or market value" of land for *railway* purposes. Land has one value for farm purposes; it has another value for city-residence purposes; and another for railway purposes. Its value today for one of



these purposes may be \$100 per acre, and a little later \$200 or \$300; and the amount that it will bring at any given time for the very purpose for which it is to be used is its value for that specific purpose. As Professor Mortimer E. Cooley said, approvingly in an article regarding the physical valuation of railways in Michigan that was made under his supervision: "The true cash value of a thing has been defined as the price upon which a purchaser and a seller mutually agree, and at which a transfer actually takes place." Now, land actually costs more for railway than for other purposes because (1) its acquisition and use for railway purposes involves damage to adjacent property not acquired that must be paid for, and (2) land that it is learned is in the direct path of a coming railway, and will be absolutely required by it, attains a monopoly value. If land that a farmer has just bought for \$100 an acre would have cost a railway \$300 an acre, would it be reasonable to say that \$300 an acre is its "true, or market value" for farm purposes? And, if not, with what fairness or reason can it be argued, as the commission argues, that \$100 an acre, being the value of land for farm purposes, is the "cost of reproduction" or "true value" of land used for railway purposes, when the railway has paid for it, or would have to pay for it if it were unoccupied, \$300 an acre?

The commission doubtless would answer that if a railway actually has paid \$300 an acre it is entitled to a fair return on that amount of investment, but that it is not fair for the existing roads to earn a return on any such amount, because they got most of their land at a price much less than its present estimated cost of reproduction for railway purposes. But does the commission think it unfair for a farmer, who, perhaps, paid only \$1.25 an acre for his land, to sell it now for \$100 an acre, or to earn a return on its greatly increased value? It probably would answer that the railway, being a public-service corporation, has not the same legal or moral right as the farmer to earn a return on the increment in value of its land.

Let us examine this theory. Minnesota's mileage of railways in proportion to its area is small compared with the mileage of the eastern states. In order to fill out its large dimensions with

population and commerce its existing lines must build many new branches, and perhaps some entirely new railways will have to be constructed. If the state says that it will let these new branches and new lines earn a return only on the farm or town-lot value of the land that they must buy, and not on the three or four times greater amount that they must pay for it to get it for railway purposes, the new branches and new trunk lines are not apt to be speedily forthcoming. And if it decides to let new lines earn a return on what their land actually costs, it cannot deny to existing lines the opportunity to earn a return on the probable cost of reproduction of their land for railway purposes. For the new branches necessarily will compete with existing branches of old lines. The new trunk lines necessarily will compete with the old trunk lines. And therefore, to hold down the rates on the old lines so that they could not earn a return on the total estimated cost of reproduction of their lands for railway purposes, would necessarily be to hold down the competitive rates of the new lines so that they could not earn a fair return on what their land actually had cost; for shippers at competitive points always will ship by the line that makes the lowest rates. In that case, the new lines would either not earn a fair return on their investment in land, or, in order to earn a fair return, they would have to make up by high rates on business at non-competitive points the losses they suffered on business at competitive points. A railway commission can hardly be imagined encouraging railways to pursue such a policy.

The tax board of Michigan, in valuing the roads of that state for taxation, appraised railway land at 100 to 125 per cent. in excess of its value for other purposes. The tax board of Wisconsin, in valuing the roads in that state for taxation, appraised railway land at 150 per cent. more than its value for other purposes. Can it be that the difference between the bases of appraisals of land in Michigan and Wisconsin, and in Minnesota, is due to the fact that in the former cases foundations were being laid on which to fix what the railways should pay to the public, while in Minnesota a foundation was being laid on which to fix what the public should pay to the railways? Such variances of opinion

between public officials in such circumstances are not calculated to encourage implicit confidence in the impartiality of a valuation.

The foregoing reasoning leads to the conclusion that in a fair physical valuation some deduction should be made from the cost of reproduction, new, for depreciation of rails, bridges, equipment, etc.; that, on the other hand, some compensating addition should be made for adaptation and solidification of roadbed; and that land should be appraised on the basis of its estimated present cost of reproduction for *railway purposes*. If this be correct the commission's "Estimate A, Present Value," is based on more nearly correct economic principles than any other of its estimates. Whether it is accurate from an engineering point of view could be determined only by engineers familiar with each of the railways appraised.

### III

But when a fair physical appraisal has been made, of what worth will it be, economically or legally, as a basis for fixing rates?

In the course of his argument in his report to show that the cost of reproduction of railway land for railway purposes is not the proper basis of valuation, Mr. Mórzan, engineer of the commission, says: "Cost of reproduction and value as a utility have no necessary or logical relation." If the cost of reproduction of the physical property for railway purposes has no necessary relation to utility, can there be any necessary relation between its cost of reproduction for farm purposes and its utility for transportation purposes? Obviously, no. But utility is one of the elements in the value of everything that properly can be regarded as capital. Consequently, it would seem, there is no necessary relation between the cost of reproduction of the physical property of a railway and its value; and an estimate of the cost of reproduction of the physical properties of the railway is not a true valuation of the railway at all.

That the cost of reproduction of the physical plant of a railway is an element in its value is clear. No one would pay the same for two railways of the same mileage, having the same earn-

ings per mile, if one had a decrepit physical plant and the other had a good one. But on the other hand no one would pay the same for two railways that had equal mileage and equally good plants, if one had only half as much earnings per mile as the other.

It will be replied, perhaps, that the earnings of a railway cannot be considered in making a valuation of it as a basis for rate-regulation, because earnings depend on rates, and the reasonableness of rates is the very thing to be determined. But earnings do not depend solely, or even mainly, on rates. Gross earnings depend both on rates and on the density and nature of the traffic. Probably no two roads charging the same rates ever had the same gross earnings per mile because one is almost sure to apply the rates to a greater density of traffic than the other. Net earnings depend as much on operating expenses as on gross earnings. Two roads might have approximately the same mileage, rates, density and nature of traffic, and gross earnings, and yet have very different net earnings because of differences in operating expenses.

The density of traffic, other things equal, depends on the skill that has been used in locating the property, in co-operating with *entrepreneurs* in building up industries on its lines, in getting good traffic-connections, etc. Low operating expenses, other things equal, indicate high operating skill. The road with the greater density of traffic, or the lower operating expenses, has more utility for its owners because it earns them more clear money. It has more utility for the public because it hauls more travelers and goods, or handles an equal number and amount at a lower cost. Can there be any question, then, that it is a more valuable property both to the public and to its owners, than its competitor with an equally good physical plant but a smaller business and higher operating expenses? And since it actually is more valuable, is it not solemn nonsense to place on it the same "valuation" as on its competitor?

The sum of the costs of reproduction of a watch-case, the main spring, the jewels, etc., is the value of a watch as junk, but not its value as a watch. Its value as a watch depends mainly on

how it will run. Similarly, the cost of reproduction of the locomotives, culverts, fish-plates, etc., of a railway is not its value as a railway. Its value as a railway depends on whether it is so located and so organized and operated as to be of great or small utility to the public, of great or small profit to its owners. Rate-regulation based on physical valuation alone would put a premium on extravagant construction and operation and a discount on skilful management.

It is believed that valuation of railways based solely on the cost of the physical properties is as unsound legally as it is economically. In the case of *Regan vs. Farmers Loan & Trust Co.*, 154 U. S., 362, the Supreme Court of the United States held that a railway was not necessarily entitled to earn a return on its cost of construction, saying:

It is unnecessary to decide, and we do not wish to be understood as laying down as an absolute rule, that in every case a failure to produce some profit to those who have invested their money in the building of a road is conclusive that the tariff is unjust and unreasonable. The construction may have been at a time when material and labor were at the highest price, so that the actual cost far exceeds the present value; the road may have been unwisely built, in localities where there is not sufficient business to sustain a road.

In such event the road will not be upheld in charging excessive rates even to pay a return on its actual cost. If the "present value" of the property be less than its "actual cost" the owners must take the consequences. This would seem to imply rather plainly that the court regarded the value of a property as something entirely different from its cost, and that a road is legally entitled to earn a return on its value, whether that be less or greater than its cost.

In *Smyth vs. Ames*, 169 U. S., 466, the Supreme Court mentioned the cost of original construction and permanent improvements, the cost of reproduction, the amount and market value of stocks and bonds outstanding, as factors to be considered, specifically including "the sum required to meet operating expenses." It added: "We do not say that there may not be other matters to be regarded in estimating the value of the property."

The advocates of physical valuation seldom go back farther

in the decisions of the Supreme Court than *Smyth vs. Ames*. But four years before in the case of *C., C. & St. L. Railway vs. Backus*, 154 U. S., 445, it used the following language :

But the value of property results from the use to which it is put and varies with the profitableness of that use, present and prospective; actual and anticipated. There is no pecuniary value outside of that which results from such use. Will it be said that the taxation must be based simply on cost, when never was it held that cost of a thing is the test of its value? Suppose there be two bridges over the Ohio, the cost of the construction of each being the same, one between Cincinnati and Newport, and another twenty miles below, and where there is nothing but a small village on either shore. The value of the one will, manifestly, be greater than that of the other, and that excess of value will spring solely from the larger use of the one than of the other.

The meaning of the last sentence is not changed by substituting for the phrase, "the larger use," the phrase, "the greater density of traffic." The *Backus* case was a tax case; but it is too obvious for dispute that what the court said here about value applies equally to appraisals for taxation and for rate-regulation.

We may reasonably conclude, therefore, that not only the cost of reproduction of the physical property for railway purposes, but also its strategic location and the ability with which it is managed as indicated by the great or small density of its traffic and its relatively large or small operating expenses, must be given due weight in fixing its valuation for rate-regulation, and that any valuation for rate-regulation that does not give due weight to these and any other factors that enter into its utility as an instrumentality of transportation will not secure the approval of the Supreme Court of the United States. It will not be easy to work out a formula for valuation that will give due weight to such factors; but the difficulty of making a valuation that shall be legal and fair is not a sufficient reason for not trying to make fair and legal any valuation that may be undertaken.

The view taken by the very able railroad commission of Wisconsin in deciding the passenger-rate cases in 1907 seems, in the main, to coincide with the opinions expressed in this paper. The state tax commission had made a physical valuation of railways based on cost of reproduction. In this valuation land used for railway purposes was appraised at two and one-half times

the value of adjacent land. In deciding the case of *Buell vs. C. M. & St. P. Railway* the railroad commission accepted as correct the tax commission's physical valuation of the St. Paul road. This valuation, based on cost of reproduction, new, was \$62,970,000; less depreciation, \$50,832,356. The commission said that to take the latter figure as a basis for rate-regulation "leaves out of account the value of the plant as a going concern, the business it has built up, and the connections it has made." And after quoting from the decision of the United States Supreme Court in *Smyth vs. Ames*, the commission continued:

We have carefully considered this matter of valuation and the various elements that should be taken into account as decided by the court. Our conclusion is so near to the cost of reproduction, new (\$62,970,000) that we have concluded to adopt that valuation; not because it happens to be made on any particular basis, but because it is equivalent to a composite value arrived at after taking into account the various elements suggested by the court.

If the Minnesota commission should follow the example of the Wisconsin commission it would take its very highest estimate—"Estimate A, Cost of Reproduction, New," amounting to an aggregate of \$411,735,195, or \$54,201 per mile—as the correct basis for regulation of rates.

#### IV

Under the present system of railway-regulation in the United States part of the valuation of any railway must be allocated to state and part to interstate business before it can be used as a basis for fixing rates. For, while the same terminals, roadway, locomotives, and cars are used for hauling both state and interstate traffic, the rates on state traffic are regulated by state authorities; those on interstate traffic, by federal authorities. The basis on which this division of valuation should be made seems almost insoluble. The Wisconsin commission appears in the passenger-rate cases to have made the division on the basis of gross earnings. The members of the railroad commission of Washington agreed on the valuation recently placed on the railways in that state, but they have disagreed entirely on how the valuation should be

divided. Chairman Fairchild contends that the division should be based on net earnings. On that basis 65 per cent. of the valuation of the Great Northern in the state should be allocated to state and 35 per cent. to interstate business, and its state rates should be slightly reduced and its interstate rates left unchanged. Commissioners Lawrence and Jones favor allocating the valuation on the basis of the cost of operation, in which case 45 per cent. of the valuation of the Great Northern should be allocated to state and 55 per cent. to interstate business, and its state rates should be radically lowered and its interstate rates substantially raised. Now, since such a wide divergence of opinion has developed between the members of a single-state commission, are there not apt to develop even wider differences of opinion between the state and the interstate commissions? In that case we might be treated to the spectacle of a state commission regulating the state rates of a road on 45 per cent. of its valuation, and the interstate commission regulating its interstate rates on 35 per cent. of its valuation, in which event it would earn nothing on the remaining 20 per cent. of its valuation. The federal courts would then have to arbitrate between the warring commissions.

Probably the only way fairly and rationally to settle this question, if valuation is to be used at all as a basis for rate-regulation, would be to have a single valuation made and all rates, state and interstate, regulated by a federal commission. This, no doubt, would require an amendment of the federal Constitution, the obstacles in the way of which are familiar.

A valuation based solely on cost of physical reproduction probably would result in such a road as the Denver & Rio Grande, with its difficult, mountainous construction and comparatively small earning, being appraised per mile as high as, or higher than, a road such as the Union Pacific, with its relatively easy construction and large gross and net earnings. An appraisal that gave due weight to the Union Pacific's greater density of traffic and lower operating expenses would result in a much higher valuation being placed on it. Even then, perhaps, it would be found that the Union Pacific's earnings were larger in proportion to its valuation than the rate-regulating authority considered



fair. But if its rates were, consequently, reduced to what was deemed fair, all the competitive rates of the Denver & Rio Grande would also have to be reduced, with the result that its earnings would be made less than anybody would consider fair. Conditions such as these would be met all over the country. Would the regulating authority then fix rates so that the weak lines could earn a fair return—6 per cent., say—and the strong lines more; or would it fix rates so that the strong roads could earn only 6 per cent. and the weak lines little or nothing?

No matter how a valuation was made, obviously it would be almost worthless in determining how much any specific rate, as on stone or dry goods, ought to be. The detailed classifications and schedules of rates would have to be made as now; for if it were attempted to make the rate on each commodity pay all the direct and indirect expenses of hauling that commodity and its pro-rata share of the entire return on the valuation, the movement of the higher classes of commodities would not be facilitated or increased, but the movement for any considerable distance of all the cheaper and bulkier commodities—grain, coal, lumber, ore, etc.—quickly would be stopped.

The only way that a valuation of railways, even if made in the fairest and wisest possible way, could be used for any just and practical purpose, would be as a guide in determining whether or not the various railways are earning more or less than a fair return. Any valuation for this purpose should be made by the federal government, so that each road would be appraised as a whole. Is it worth while to spend a large sum of money to make one wholesale valuation for this purpose? If this question had been asked two years ago most shippers and railway commissioners would have answered in the affirmative and most railway officers would have answered in the negative. Since then a good many railway officers have modified their opinions or entirely changed them. The popular view is that the railways as a whole are greatly over-capitalized and that they are charging excessive rates to pay dividends on watered stock; and this view is constantly causing enforced reductions in passenger and freight rates. On the other hand, railway managers, while conceding

that a good many roads are over-capitalized, express confidence that a fair appraisal of all the railways, based even on cost of reproduction alone, would far exceed the aggregate net capitalization—arrived at by eliminating duplications due to intercorporate ownership of stocks—and that a fair appraisal based on all the factors that ought properly to be considered would, for all the railways, far exceed their present gross capitalization, and demonstrate that railway earnings and dividends are not excessive, but quite the contrary. The Minnesota and other valuations lend support to this view.

Now, a general valuation would set a limit below which reductions of rates and earnings by public authority could not go. If it showed that any road, or all the roads, earn no more than a fair return it would be notice that for every future reduction in rates there must be a compensating advance. If it showed that any road, or all the roads, earn less than a fair return, it would practically authorize an increase in rates. Therefore, while many persons are advocating valuation of railways as a means of getting reductions of rates, not a few railway managers of prominence are beginning to regard the project as a possible effective means of preventing further reductions, or even securing advances.

SAMUEL O. DUNN